AMENDMENT TO THE SPECIFICATION

Please amend on page 1, paragraph 1, beginning on page 1 and ending on page 1;

The present invention relates to measurement devices in general, and more particularly to a body composition monitor apparatus ~~by measuring~~ which measure dielectric constant of body ~~endermic~~ tissues under the skin and body impedance based on the method of frequency digital sampling.

Please amend on page 1, paragraph 2 beginning on page 1 and ending on page 1:

Body composition refers to the total contents consisting of every tissue and organ of a human's body, its total weight is namely body weight, which is composed of two parts: fat and non-fat content. The former mass is called body fat mass, the ratio between it and body mass is called percent body fat (Fat %)in human body. The latter includes the weight of water, viscera, bones, muscle, mineral salts and so on, and is also called lean body mass or fat free mass, among which water content accounts for most of the mass. 70% fat content is mainly distributed in and below the region of the waist.

Please amend on page 1, paragraph 3 beginning on page 1 and ending on page 1:

Body composition indicates the rates of ~~body tissue structure such as~~ lean body mass (LBM) and body fat. Different tissue body structure contents result in different body functions and activity, and in order to maintain the body's normal

functions, it is required that all contents adjust to one another at certain rates. Once the maladjusted rates destroy the normal physiological functions and activity, the normal growth and health of the body will be affected. Body composition can also indicate physical attributes, body shape characteristic and body stature, and fat content can indicate body fitness. So body composition is significant to make the fitness standard and body shape assessment and so on.

Please amend on page 1, paragraph 4 beginning on page 1 and ending on page 1:

There are already some methods ~~and fruits~~ for measuring body fat content alone, such as isotope dilution method, underwater weighing method, height and weight empirical algorithms, ultrasound measurement, infrared measurement and so on. All these methods have the shortcomings of complicated equipment and inconvenient operation.

Please amend on page 1, paragraph 6 beginning on page 1 and ending on page 2:

The method of bioelectrical impedance analysis (BIA) is considered to be the simplest method for measuring human body composition (such as fat content). This method is based upon the principle that body tissue conductivity of bio electricity in different ~~region~~ areas of the body stimulated by outside electricity is different. For example, the conductivity of muscle is high and then the impedance is small because of its high rate of water content, while the conductivity of fat tissue, bone tissue and lung tissue filled with air is very low and the

impedance is relatively great. So body composition can be estimated according to tissue's impedance. Up to now, though those open patents on measuring body composition based on bioelectrical impedance analysis (BIA) adopt different circuits, arithmetic, apparatus structures and different output methods, they have three common characteristic in nature, the first is to obtain bioelectric impedance by measuring voltage or voltage difference then transforming to digital value through A/D, the second is to use at least more than three electrodes (groups), among which two electrodes is certain to apply high frequency small current to human body in order to stimulate bio electricity and the other two electrodes collect stimulated voltage signal indicating bioelectrical impedance, if unite two of four electrodes to be used as reference electrodes, then there are 3 electrodes, the third is that the different frequency signals applied to human body must be signals with determined frequencies. As disclosed in U.S. Pat. No.6, 151, 523, bioelectrical impedance can be measured by placing electrodes at a person's toes and heels, and by inputting the weight and height of the subject, percent body fat can also be estimated. But the shortcoming of this patent is more electrodes and no body water measuring. European Patent No.EP1147740A1 shown a living body variable measuring device. The measuring method of the patent is feeding a high frequency current to body and then measuring the voltage or voltage difference for estimating bioelectrical impedance. One of mode of signal transmission of this patent is that the weight scale-like body and box-like display device are provided with wireless communication means for signal communication between weight scale-like body and box-like display device, but no technical detail is indicated. There are 2 shortcomings in this patent. Firstly, there are 4 electrodes in the device, 2 electrodes for feeding a high frequency current to body and 2 electrodes for measuring the voltage, so as to forming

feeding current circuit and voltage measuring circuit respectively, which are complicated. Secondly, the voltage measuring circuit needs an A/D converter for converting analog signals from the voltage measuring circuit to digital signals. European patent No.EP1080686A1 shown another bioelectrical impedance measuring method and body composition measuring apparatus, in which a first, second and third bioelectrical impedance values are determined by a measurement using the alternating current having a first, second and third frequency respectively. Then, a vector impedance locus is derived from only the derived first, second and third bioelectrical impedance values to determine the bioelectrical impedance values at 0 frequency and at infinite frequency. The shortcomings of this patent are also complicated measuring circuit and the A/D converter for converting analog signals from the voltage measuring circuit to digital signals. The Patent No.WO02/080770A1 shown a method for measuring of edema. By the method an electromagnetic probe (20-500MHZ) is placed on the skin, and the capacitance of the probe is proportional to the dielectric constant of the skin and subcutaneous fat, which is proportional to the water content of the skin. The shortcomings of this patent are that for the measurement the probe is secured on the skin by an attachment, such as strap-like attachment, which is discommodious. The Patent No.WO01/036952A1 shown a method for measuring skin surface hydration and device for applying the method, in which method a electromagnetic probe is placed on the skin for measuring the capacitance of the skin, characterized in that a wave signal is transmitted into the probe, the capacitance of the probe is measured by comparing the phases of the direct and reflected wave. The shortcomings of this patent are that the structure of the electromagnetic probe is coaxial and complicated. The shortcomings of the above methods are: first, the methods have limitation if body fat and water content are

determined based on bioelectrical impedance alone, second, because of the great diversity of human bodies, if only one or multiple determined frequencies are applied to human body, the results can not indicate body status accurately, third, there are large error in those low-cost apparatus when use voltage measurement to determine body impedance.

Please amend on page 2, paragraph 1 beginning on page 2 and ending on page 2:

The present invention aims to solve those questions above, the object is to provide a method for measuring dielectric constant of body ~~endermic~~ tissues under the skin by using capacitance sensor contacting body skin and based on the method of frequency digital sampling.

Please amend on page 2, paragraph 3 beginning on page 2 and ending on page 2:

The present invention also aims to provide a method of determining body composition by jointly using measurement of two parameters: dielectric constant of body ~~endermic~~ tissues under the skin and body impedance.

Please amend on page 3, paragraph 1 beginning on page 3 and ending on page 3:

Because the dielectric constant of body ~~endermic~~ tissues under the skin is related directly to the fat content and water content of body tissues, the present invention regards the

dielectric constant of body ~~endermic~~ tissues <u>under the skin</u> as a measuring parameter for evaluating body composition. The present invention's method and principle for measuring dielectric constant of body ~~endermic~~ tissues <u>under the skin</u> is: when a testee stands with barefoot on the measuring platform, his soles of two feet contact two capacitance grid sensors, and the oscillator circuit connected with capacitance grid sensors generates oscillating frequency signals related to dielectric constant of body ~~endermic~~ tissues <u>under the skin</u>, the signals are sampled and then the dielectric constant of body ~~endermic~~ tissues <u>under the skin</u> can be obtained.

Please amend on page 3, paragraph 2 beginning on page 3 and ending on page 3:

Because body impedance is related directly to the fat content and water content of body tissues, the present invention regards the body impedance as a measuring parameter for evaluating body composition. The present invention's method and principle for measuring body impedance is: when a testee stands with barefoot on the measuring platform, his two feet contact two (groups ~~of)~~<u>of)</u> electrode plates mounted on the platform simultaneously and respectively. At this time human body is connected with oscillator circuit as a two ends impedance element and a loop is formed at and below human's waist region. The oscillating frequency of the oscillator circuit is related to the impedance of human body. By changing parameters of other elements of oscillator circuit, several different frequency signals are obtained related to body impedance, then the body impedances corresponding to several different frequencies are determined.

Please amend on page 3, paragraph 3 beginning on page 3 and ending on page 3:

The method and principle of the present invention to determine body composition by jointly using measurement of the two kinds of measuring parameters, dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, is to introduce to math models the dielectric constant of body ~~endermic~~ tissues under the skin, the body impedance, body weight obtained from weighing sensor and circuit, and the input data by keyboard, to calculate by microprocessor, and to display body weight, body fat content, total body water (TBW) and the ratio between intracellular water and TBW (ICW/TBW) by display.

Please amend on page 3, paragraph 4 beginning on page 3 and ending on page 4:

The math models for calculating these data are as follows:

$$\mathrm{Fat} = \frac{a_1 H + a_2 W + a_3 R_{m1} + a_4 R_{m2} + a_5 R_{m3} + a_6 Y + a_0}{ce^{-(b_1 H + b_2 W)}}$$

$$\mathrm{Fat}(\%) = \frac{\mathrm{Fat}}{W}$$

$$\mathrm{TBW} = \frac{\mathrm{Fat} + K_1 \varepsilon_r}{K_2 \varepsilon_r} + K_3$$

where W is body weight (Kg), Rm1, Rm2, Rm3 are body impedance corresponding respectively to three kinds of undetermined frequencies. ε_r is the dielectric constant of body ~~endermic~~ tissues under the skin; Fat is body fat value(kg); Fat(%) is percent body fat; H is body height (cm); Y is a subject's age,

a_0、a_1、a_2、a_3、a_4、a_5、a_6、b_1、b_2、c、K1、K2、K3、K4 are all coefficients, whose values are related to gender. Among these parameters, , W 、Rm1、Rm2 、Rm3、ε_r are determined by measurement, H、Y and gender are input by keyboard.

Please amend on page 4, paragraph 12 beginning on page 4 and ending on page 4:

Fig7A is a schematic view showing the first kind of electrode configuration of capacitance grid sensor measuring the dielectric constant of body ~~endermic~~ tissues under the skin.

Please amend on page 4, paragraph 13 beginning on page 4 and ending on page 4:

Fig7B is a schematic view showing the second kind of electrode configuration of capacitance grid sensor measuring the dielectric constant of body ~~endermic~~ tissues under the skin.

Fig7C is a schematic view showing the first kind of electrode configuration of capacitance grid sensor measuring the dielectric constant of body tissues under the skin.

Fig7D is a schematic view showing the second kind of electrode configuration of capacitance grid sensor measuring the dielectric constant of body tissues under the skin.

Please amend on page 4, paragraph 14 beginning on page 4 and ending on page 4:

~~Fig7C is a schematic view showing the third kind of~~

~~electrode configuration of capacitance grid sensor measuring the dielectric constant of body endermic tissues.~~

Please amend on page 4, paragraph 15 beginning on page 4 and ending on page 4:

~~Fig7D is a schematic view showing the fourth kind of electrode configuration of capacitance grid sensor measuring the dielectric constant of body endermic tissues.~~

Please amend on page 4, paragraph 16 beginning on page 4 and ending on page 4:

Fig**8** is a schematic view showing the measuring mode of measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance by applying undetermined frequencies through sole.

Please amend on page 4, paragraph 17 beginning on page 4 and ending on page 4:

Fig**9** is a schematic diagram showing the circuit system structure of measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance by using undetermined frequencies.

Please amend on page 4, paragraph 18 beginning on page 4 and ending on page 4:

Fig**10** is a schematic diagram showing the positive feedback

RC oscillator circuit for measuring the dielectric constant of body ~~endermic~~ tissues under the skin in the positive feedback RC oscillator circuit for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance.

Please amend on page 4, paragraph 19 beginning on page 4 and ending on page 5:

Fig**11** is a schematic view showing the circuit for measuring the body impedance in the positive feedback RC oscillator circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance.

Please amend on page 5, paragraph 1 beginning on page 5 and ending on page 5:

Fig**12** is an alternative schematic view showing the circuit for measuring the body impedance in the positive feedback RC oscillator circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance.

Please amend on page 5, paragraph 8 beginning on page 5 and ending on page 5:

Referring now to Fig**2**A, it shows a kind of measuring platform configuration of integrative apparatus based upon the measuring mode shown in Fig**1**A. The platform **1** is positioned on scale sensor. The surface of the platform **1** is insulative and, there are two electrodes **8**, **9** on the platform, which have enough area to be contacted by human's sole and are made of conductive

materials. There is no conduction between electrodes **8** and **9**, between electrodes **8**, **9** and platform **1**. Also on the platform **1** there is at least more than one capacitance grid sensors **10, 11**, which are used to measure the dielectric constant body ~~endermic~~ tissues under the skin and can be contacted by human's soles. Keyboard **2** and display **3** are located on platform **1**.

Please amend on page 5, paragraph 10 beginning on page 5 and ending on page 6:

Referring now to Fig**3**A, it shows the system configuration of integrative apparatus shown in Fig**2**A. Electrode plates **8, 9** and capacitance grid sensors **10, 11** are connected with the interfaces of positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, and positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance is connected with two interfaces of microprocessor MCU system **15** of the integrative apparatus. One of the two interfaces is a signal collection interface of MCU system **15** of the integrative apparatus, the other is a control interface of MCU system **15** of the integrative apparatus used to send switch instruction to positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance in order to switch undetermined multiple frequencies and measuring signals of the dielectric constant of body ~~endermic~~ tissues under the skin. The signal wires of weighing sensor **19** are connected with weighing signal process circuit **18**, in which the signal from weighing sensor 19 is converted into frequency signal, and the processed frequency signal is applied to one interface of the MCU system **15** of the integrative apparatus through weighing signal

processing circuit **18**. Display **16** is connected with the output of MCU system **15** of the integrative apparatus and is used to show the input data and the measuring result. Keyboard **17** is connected with the I/O interface of MCU system **15** of the integrative apparatus and is used to input data to MCU system **15** of the integrative apparatus.

Please amend on page 6, paragraph 1 beginning on page 6 and ending on page 6:

Referring now to Fig**3**B, it shows the system configuration of integrative apparatus shown in Fig**2**B.The two groups of electrode **12, 13** composed of electrode plates connected with one another by wires and being able to contact human's soles, and capacitance grid sensor **10, 11** are connected with the interfaces of positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, and positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance is connected with two interfaces of MCU system **15** of the integrative apparatus. One of the interfaces is the signal collection interface of MCU **15** system of the integrative apparatus and the other is a control interface of the MCU system **15** of the integrative apparatus used to send switch instruction to positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance in order to switch undetermined multiple frequencies and the measuring signal of body dielectric constant of ~~endermic~~ tissues under the skin. The signal wires of weighing sensor **19** are connected with weighing signal process circuit **18**, in which the signal from weighing sensor 19 is converted into frequency signal, and the processed frequency

signal is applied to one interface of MCU system **15** of the integrative apparatus through weighing signal processing circuit **18**. Display **16** is connected with the output of MCU system **15** of the integrative apparatus and is used to show the input data and the measuring results. Keyboard **17** is connected with the I/O interface of MCU **15** and is used to input data to MCU **15**.

Please amend on page 6, paragraph 2 beginning on page 6 and ending on page 6:

Referring now to Fig**4**A, it shows a kind of measuring platform configuration of measuring apparatus based upon the measuring mode shown in Fig**1**B. The platform **4** is positioned on scale sensor, and on the platform **4**, there are two electrodes **8**, **9** with enough area to be contacted by human's sole. Also on the platform **4** there are at least one or more capacitance grid sensors **10**, **11** which can be contacted by human's soles and are used to measure dielectric constant of the body ~~endermic~~ tissues under the skin. Infrared ray transmitting window **5** is positioned on measuring platform **4**.

Please amend on page 6, paragraph 3 beginning on page 6 and ending on page 6:

Referring now to Fig**4**B, it shows another kind of measuring platform configuration of measuring apparatus based upon the measuring mode shown in Fig**1**B. The platform **401** is positioned on scale sensor, and on the platform **401**, there are two groups of electrode **12**, **13** comprising electrode plates connected by conducting wires and with enough area to be contacted by human's soles. Also on the platform **401** there are at least one or more capacitance grid sensors **10**, **11** which can be contacted by human's

soles and are used to measure dielectric constant of the body ~~endermic~~ tissues under the skin. Infrared ray transmitting window **5** is positioned on measuring platform **401**.

Please amend on page 6, paragraph 4 beginning on page 6 and ending on page 6:

Referring now to Fig**5**A, it shows the system configuration of measuring apparatus shown in Fig**4**A. Electrodes **8, 9** and capacitance grid sensor **10, 11** are connected with the interfaces of positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, and positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance is connected with two interfaces of microprocessor MCU system **20** of measuring apparatus. One of the two interfaces is a signal collection interface of MCU system **20** of measuring apparatus, the other is a control interface of MCU system **20** of measuring apparatus used to send switch instruction to positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance in order to switch undetermined multiple frequencies and measuring signal of dielectric constant of body ~~endermic~~ tissues under the skin. The signal wires of weighing sensor **19** are connected with weighing signal process circuit **18,** in which the signal from weighing sensor 19 is converted into frquency signal, and the processed frequency signal is applied to one interface of MCU system **20** of the measuring apparatus through weighing signal processing circuit 18. The determined data by measurement are emitted or received by infrared ray-emitting- receiving circuit **21**.

Please amend on page 6, paragraph 5 beginning on page 6 and ending on page 7:

Referring to Fig**5**B, it shows the system configuration of measuring apparatus shown in Fig**4**B.Two groups of electrodes **12**, **13**, which are composed of electrode plates connected with one another by wires and can be in contact with human's soles, and capacitance grid sensors **10**, **11** are connected with the interfaces of positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, and positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance is connected with two interfaces of MCU **20** system of the measuring apparatus. One of the interfaces is the signal collection interface of MCU **20** system of the measuring apparatus and the other is a control interface of MCU system **20** of the measuring apparatus used to send switch instruction to positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance in order to switch undetermined multiple frequencies and the measuring signal of dielectric constant of body ~~endermic~~ tissues under the skin. The signal wires of weighing sensor **19** are connected with weighing signal process circuit **18**, in which the signal from weighing sensor 19 is converted into frequency signal and the processed frequency signal is applied to one interface of MCU system **20** of the measuring apparatus through weighing signal processing circuit **18**. The determined data by measurement are emitted or received by infrared ray-emitting- receiving circuit **21**.

Please amend on page 7, paragraph 2 beginning on page 7 and ending on page 7:

In the present invention, there are four embodiment examples of capacitance grid sensor for measuring the dielectric constant of body ~~endermic~~ tissues under the skin.

Please amend on page 7, paragraph 3 beginning on page 7 and ending on page 7:

~~Referring now to Fig**7**A, the capacitance grid sensor for measuring the dielectric constant of body endermic tissues is composed of two non-intersectant electrodes **23**.~~

Please amend on page 7, paragraph 4 beginning on page 7 and ending on page 7:

~~Referring now to Fig**7**B, the two groups of electrodes **24** of the capacitance grid sensor for measuring the dielectric constant of body endermic tissues are dentiform, nested and non-intersectant.~~

Please amend on page 7, paragraph 5 beginning on page 7 and ending on page 7:

Referring now to Fig**7**~~C~~A, the two groups of electrodes **25** of the capacitance grid sensor for measuring the dielectric constant of body ~~endermic~~ tissues under the skin are equidistant, and circle outward from the circular or rectangular center, and the two groups of electrodes are never intersectant.

Please amend on page 7, paragraph 6 beginning on page 7 and ending on page 7:

Referring now to Fig**7**~~D~~B, the electrodes **26** of capacitance grid sensor for for measuring the dielectric constant of body ~~endermic~~ tissues under the skin are equidistant and non-touching plates, and are connected by conductors to become two equidistant and non-touching electrode groups.

Please amend on page 7, paragraph 7 beginning on page 7 and ending on page 7:

Referring now to Fig**8**, it shows a measuring method, wherein the subject is connected to the circuit as an impedance element Rm for measuring body impedance and dielectric constant of body ~~endermic~~ tissues under the skin. The testee's two feet contact two (groups of) electrode plates **27** simultaneously and respectively. Then the human body is connected as a two end impedance element Rm with positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, and a loop is formed at and below the human body waist ~~region~~place. The oscillating frequency of the oscillator circuit is related to the impedance element Rm. By changing parameters of other elements of oscillator circuit, several different frequency signals are obtained related to body impedances, then the body impedances corresponding to several different frequencies are determined. When the testee's foot soles contact two capacitance grid sensors **28**, capacitor Cm is formed, and the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance connected with Cm generates oscillating frequency signals related to dielectric constant of

body ~~endermic~~ tissues under the skin, then this kind of frequency digital signals are dealt with by sampling and the dielectric constant of body ~~endermic~~ tissues under the skin is determined.

Please amend on page 7, paragraph 8 beginning on page 7 and ending on page 8:

Referring now to Fig**9**, it shows the system configuration of circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance by using undetermined frequencies. Human body impedance Rm is coupled to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, capacitor Cm formed by capacitance grid sensor together with capacitors C1,C2,…Cn, which are different in values, are introduced to switch circuit **30**. Switch circuit **30** is introduced to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance. By switching C1, C2,…Cn in circuit **30** to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, oscillating signals of multiple undetermined frequencies related to Rm are generated, then body impedances can be measured corresponding to different frequencies. By switching circuit **30** Cm is introduced to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance and dielectric constant of body ~~endermic~~ tissues under the skin can be measured. The principle is described as follows:

Please amend on page 8, paragraph 1 beginning on page 8 and ending on page 8:

When C1 is introduced to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, the output frequency of oscillating signal is :

$$f_1 = \frac{K}{R_m C_1}$$

Please amend on page 8, paragraph 2 beginning on page 8 and ending on page 8:

When C1 and Cm are in parallel connection and introduced to the positive feedback RC oscillator circuit **14** for measuring the dielectric constant of body ~~endermic~~ tissues under the skin and body impedance, the output frequency of oscillating signal is

$$f_2 = \frac{K}{R_m(C_1 + C_m)}$$

Then can get

$$C_m = \frac{C_1(f_1 - f_2)}{f_2}$$

Please amend on page 8, paragraph 3 beginning on page 8 and ending on page 8:

While dielectric constant of body ~~endermic~~ tissue under the skin, ε_r can be gotten by following equation

$$\varepsilon_r = \frac{C_m \delta}{\varepsilon_0 A}$$

where δ is the electrode distance of capacitance grid sensor, ε_0 is vacuum dielectric constant□A is electrode area forming the capacitance of capacitance grid.

Please amend on page 8, paragraph 4 beginning on page 8 and ending on page 8:

Referring now to Fig**10**, it is a schematic view showing the circuit for measuring the dielectric constant of body ~~endermic~~ tissues under the skin in the positive feedback RC oscillator circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance. The circuit is made up of two invertors, capacitor Ca, resistor Ra, body impedance Rm and capacitance grid sensor Cm in contact with human's soles. The connection between capacitance grid sensor Cm and capacitor Ca is in series, and the other ends of the series circuit are respectively connected with the output end of one invertor and input end of the other invertor. The connection between Ra and Rm is in series, and and the other ends of the series circuit are respectively connected with the input end and the output end of one invertor. The input end of one invertor is connected with the output end of the other invertor.

Please amend on page 8, paragraph 5 beginning on page 8 and ending on page 8:

Referring now to Fig**11**, it is a schematic view showing the circuit for measuring the body impedance in the positive feedback

RC oscillator circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance. The circuit comprises two invertors, resistor Ra, capacitor Ca and body impedance Rm. The capacitance grid sensor Cm is a short-circuit capacitance in the circuit. The input end of one invertor is connected with the output end of the other invertor, between the joint of the two invertors and the input end of the invertor, the series-wound circuit comprised by resistor Ra and body impedance Rm is introduced. The two ends of the capacitor Ca are connected respectively with the two invertors' two ends that are not connected with each other. The oscillating frequency of the oscillator circuit can change with the different body impedance Rm.

Please amend on page 8, paragraph 6 beginning on page 8 and ending on page 9:

Referring now to Fig**12**, it is a schematic view showing another kind of circuit for measuring the body impedance in the positive feedback RC oscillator circuit for measuring dielectric constant of body ~~endermic~~ tissues under the skin and body impedance. The circuit comprises one D trigger, resistors Ra1 and Ra2, capacitor Ca1 and body impedance Rm. The body impedance Rm is in series connection with resistor Ra1 and then in parallel connection with resistor Ra2. The one end of the circuit in series-parallel connection is connected with the invert end of the D trigger, and another end is connected with the CD end, CLK end, and GND end of the D trigger. The oscillating frequency of the oscillator circuit can change with the different body impedance Rm.

Please amend on page 9, paragraph 3 beginning on page 9 and ending on page 9:

The advantages of the present invention are: 1. To jointly evaluate body composition by using the two measuring parameters of body impedance by measurement and the dielectric constant of body ~~endermic~~ tissues under the skin measured by the capacitance grid sensor in contact with the human body's skin, so to decrease the uncertainty caused by assessment using only one measured parameter; 2. To measure the body impedance and dielectric constant of body ~~endermic~~ tissues under the skin based on the method of frequency digital sampling, so to leave out the A/D converting part and to improve the measuring accuracy; 3. To measure body impedance by using non-fixed multiple frequency method, so to make the body difference to be indicated more obviously in body impedance difference and to indicate the body composition status genuinely. The apparatus of the present invention is used to conveniently monitor the body composition in everyday life.